

## PATENT COOPERATION TREATY

PCT



REC'D 18 FEB 2005

WIPO

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PS0215/WO		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NL 03/00878	International filing date (day/month/year) 10.12.2003	Priority date (day/month/year) 12.12.2002	
International Patent Classification (IPC) or both national classification and IPC F16H61/00			
Applicant VAN DOORNE'S TRANSMISSIE B.V. ET AL			
<p>1. This International preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 1 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><del>VI <input type="checkbox"/> Certain documents cited</del></p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand  09.07.2004		Date of completion of this report  21.02.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer  Goeman, F  Telephone No. +31 70 340-4086 	

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/NL 03/00878

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-6 as originally filed

**Claims, Numbers**

1-4 received on 25.08.2004 with letter of 17.08.2004

**Drawings, Sheets**

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/NL 03/00878**

---

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-4
	No: Claims	
Inventive step (IS)	Yes: Claims	1-4
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-4
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V**

**Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following document:  
D1: JP-A-63-053352
2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and this document shows the following features thereof (the references in parentheses applying to this document): Continuously variable transmission for motor vehicles, provided with a primary pulley (1) and a secondary pulley (6), around which a drive belt (11) is arranged, clamped between two conical pulley discs (2a,2b,7a,7b) of the respective pulley (1,6), a running surface of at least one pulley disc of the primary pulley (1) and of at least one pulley disc the secondary pulley (6), by means of which running surface this pulley disc is in contact with the drive belt (11), being provided, as seen in a cross section oriented perpendicular to a tangential direction, with a curvature, so that a pulley angle between a tangent on the running surface and a radial direction varies between a lowest value at the location of a radially innermost position on the running surface and a highest value at the location of a radially outermost position on the running surface.
3. The subject-matter of claim 1 therefore differs from this known continuously variable transmission in that that the curvature of the running surface of the primary pulley and the curvature of the running surface of the secondary pulley differ from one another by the feature that the highest value for the pulley angle of the secondary pulley is lower than the highest value for the pulley angle of the primary pulley.
4. ~~The problem to be solved by the present invention may therefore be regarded as~~ to avoid that the tensile force becomes big for a prolonged period of time.
5. The solution is not known from nor is it rendered obvious by any available prior art document. The claim 1 and dependent claims 2-4 therefore meet the requirements of Articles 33(2) and 33(3) PCT.

## CLAIMS

1. Continuously variable transmission (1) for motor vehicles, provided with a primary pulley (2) and a secondary pulley (3), around which a drive belt (10) is arranged, clamped between two conical pulley discs (21, 22; 31, 32) of the respective pulley (2; 3), a running surface (40) of at least one pulley disc (44) of the primary pulley (2) and the secondary pulley (3), by means of which running surface this pulley disc is in contact with the drive belt (10), being provided, as seen in a cross section oriented perpendicular to a tangential direction, with a curvature, so that a pulley angle ( $\alpha$ ) between a tangent (41) on the running surface (40) and a radial direction (42) varies between a lowest value at the location of a radially innermost position on the running surface (40) and a highest value at the location of a radially outermost position on the running surface (40), characterized in that the curvature of the running surface (40) of the primary pulley (2) and the curvature of the running surface (40) of the secondary pulley (3) differ from one another by the feature that the highest value for the pulley angle ( $\alpha$ ) of the secondary pulley (3) is lower than the highest value for the pulley angle ( $\alpha$ ) of the primary pulley (2).
2. Transmission (1) according to Claim 1, characterized in that a range between the highest value and the lowest value for the pulley angle ( $\alpha$ ) of the secondary pulley (3) is smaller than a corresponding range of the pulley angle ( $\alpha$ ) of the primary pulley (2).
3. Transmission (1) according to Claim 1 or 2, characterized in that the lowest value for the pulley angle ( $\alpha$ ) of the secondary pulley (3) is equal to the lowest value for the pulley angle ( $\alpha$ ) of the primary pulley (2).
- 
4. Motor vehicle having an engine and a load which is to be driven, between which a transmission (1) according to one of the preceding claims is incorporated, a power which is to be generated by the engine being transmitted by the drive belt (10) from the primary pulley (2) to the secondary pulley (3) and being released to the load by the secondary pulley (3).